

## 3.2 &amp; 3.3 Worksheet

Solve.

1.  $3x + 7 = 19$

$$\begin{array}{r} 3x + 7 = 19 \\ -7 \quad -7 \\ \hline 3x = 12 \end{array}$$

$$\begin{array}{r} 3x = 12 \\ \div 3 \quad \div 3 \\ \hline x = 4 \end{array}$$

$$\boxed{x=4}$$

4.  $\frac{a}{3} + 4 = 6$

$$\begin{array}{r} \frac{a}{3} + 4 = 6 \\ -4 \quad -4 \\ \hline \frac{a}{3} = 2 \end{array}$$

$$\begin{array}{r} \frac{a}{3} = 2 \\ \times 3 \quad \times 3 \\ \hline a = 6 \end{array}$$

$$\boxed{a=6}$$

7.  $8y + 3y = 44$

$$\begin{array}{r} 8y + 3y = 44 \\ 11y = 44 \\ \div 11 \quad \div 11 \\ \hline y = 4 \end{array}$$

$$\boxed{y=4}$$

10.  $12v + 14 + 10v = 80$

$$22v + 14 = 80$$

$$\begin{array}{r} 22v + 14 = 80 \\ -14 \quad -14 \\ \hline 22v = 66 \end{array}$$

$$\begin{array}{r} 22v = 66 \\ \div 22 \quad \div 22 \\ \hline v = 3 \end{array}$$

$$\boxed{v=3}$$

13.  $3 + 4(z + 5) = 31$

$$3 + 4z + 20 = 31$$

$$4z + 23 = 31$$

$$\begin{array}{r} 4z + 23 = 31 \\ -23 \quad -23 \\ \hline 4z = 8 \end{array}$$

$$\begin{array}{r} 4z = 8 \\ \div 4 \quad \div 4 \\ \hline z = 2 \end{array}$$

$$\boxed{z=2}$$

16.  $5h + 2(11 - h) = -5$

$$5h + 22 - 2h = -5$$

$$3h + 22 = -5$$

$$\begin{array}{r} 3h + 22 = -5 \\ -22 \quad -22 \\ \hline 3h = -27 \end{array}$$

$$\begin{array}{r} 3h = -27 \\ \div 3 \quad \div 3 \\ \hline h = -9 \end{array}$$

$$\boxed{h=-9}$$

2.  $5h + 4 = 19$

$$\begin{array}{r} 5h + 4 = 19 \\ -4 \quad -4 \\ \hline 5h = 15 \end{array}$$

$$\begin{array}{r} 5h = 15 \\ \div 5 \quad \div 5 \\ \hline h = 3 \end{array}$$

$$\boxed{h=3}$$

5.  $17 = \frac{w}{5} + 13$

$$\begin{array}{r} 17 = \frac{w}{5} + 13 \\ -13 \quad -13 \\ \hline 4 = \frac{w}{5} \end{array}$$

$$5 \cdot 4 = \frac{w}{5} \cdot 5$$

$$\boxed{w=20}$$

8.  $11x - 9x = 18$

$$\begin{array}{r} 11x - 9x = 18 \\ 2x = 18 \\ \div 2 \quad \div 2 \\ \hline x = 9 \end{array}$$

$$\boxed{x=9}$$

11.  $11w - 9 - 7w = 15$

$$\begin{array}{r} 11w - 9 - 7w = 15 \\ 4w - 9 = 15 \\ +9 \quad +9 \\ \hline 4w = 24 \end{array}$$

$$\begin{array}{r} 4w = 24 \\ \div 4 \quad \div 4 \\ \hline w = 6 \end{array}$$

$$\boxed{w=6}$$

14.  $14 + 2(4g - 3) = 40$

$$14 + 8g - 6 = 40$$

$$8g + 8 = 40$$

$$\begin{array}{r} 8g + 8 = 40 \\ -8 \quad -8 \\ \hline 8g = 32 \end{array}$$

$$\begin{array}{r} 8g = 32 \\ \div 8 \quad \div 8 \\ \hline g = 4 \end{array}$$

$$\boxed{g=4}$$

17.  $27 = 3c - 3(6 - 2c)$

$$27 = 3c - 18 + 6c$$

$$27 = 9c - 18$$

$$\begin{array}{r} 27 = 9c - 18 \\ +18 \quad +18 \\ \hline 45 = 9c \\ \div 9 \quad \div 9 \\ \hline c = 5 \end{array}$$

$$\boxed{c=5}$$

3.  $7d - 1 = 13$

$$\begin{array}{r} 7d - 1 = 13 \\ +1 \quad +1 \\ \hline 7d = 14 \end{array}$$

$$\begin{array}{r} 7d = 14 \\ \div 7 \quad \div 7 \\ \hline d = 2 \end{array}$$

$$\boxed{d=2}$$

6.  $7 = \frac{5}{6}c - 8$

$$\begin{array}{r} 7 = \frac{5}{6}c - 8 \\ +8 \quad +8 \\ \hline 15 = \frac{5}{6}c \end{array}$$

$$\begin{array}{r} 15 = \frac{5}{6}c \\ \times \frac{6}{5} \quad \times \frac{6}{5} \\ \hline 18 = c \end{array}$$

$$\boxed{c=18}$$

9.  $p + 2p - 3 = 6$

$$\begin{array}{r} p + 2p - 3 = 6 \\ 3p - 3 = 6 \\ +3 \quad +3 \\ \hline 3p = 9 \end{array}$$

$$\begin{array}{r} 3p = 9 \\ \div 3 \quad \div 3 \\ \hline p = 3 \end{array}$$

$$\boxed{p=3}$$

12.  $5a + 3 - 3a = -7$

$$\begin{array}{r} 5a + 3 - 3a = -7 \\ 2a + 3 = -7 \\ -3 \quad -3 \\ \hline 2a = -10 \end{array}$$

$$\begin{array}{r} 2a = -10 \\ \div 2 \quad \div 2 \\ \hline a = -5 \end{array}$$

$$\boxed{a=-5}$$

15.  $5l + 2(l + 1) = 23$

$$5l + 2l + 2 = 23$$

$$7l + 2 = 23$$

$$\begin{array}{r} 7l + 2 = 23 \\ -2 \quad -2 \\ \hline 7l = 21 \end{array}$$

$$\begin{array}{r} 7l = 21 \\ \div 7 \quad \div 7 \\ \hline l = 3 \end{array}$$

$$\boxed{l=3}$$

18.  $3 = 6c - 5(2c - 7)$

$$3 = 6c - 10c + 35$$

$$3 = -4c + 35$$

$$\begin{array}{r} 3 = -4c + 35 \\ -35 \quad -35 \\ \hline -32 = -4c \\ \div -4 \quad \div -4 \\ \hline c = 8 \end{array}$$

$$\boxed{c=8}$$

Write an equation for the function described. Then find the input.

19. The output of a function is 7 more than 3 times the input. Find the input when the output is -8.

$$\begin{array}{r} 3x + 7 = -8 \\ -7 \quad -7 \\ \hline 3x = -15 \\ \frac{3x}{3} = \frac{-15}{3} \end{array} \quad \boxed{x = -5}$$

20. The output of a function is 4 more than 2 times the input. Find the input when the output is -10.

$$\begin{array}{r} 2x + 4 = -10 \\ -4 \quad -4 \\ \hline 2x = -14 \\ \frac{2x}{2} = \frac{-14}{2} \end{array} \quad \boxed{x = -7}$$

21. The output of a function is 9 less than 10 times the input. Find the input when the output is 11.

$$\begin{array}{r} 10x - 9 = 11 \\ +9 \quad +9 \\ \hline 10x = 20 \\ \frac{10x}{10} = \frac{20}{10} \end{array} \quad \boxed{x = 2}$$

22. Tyler paid \$124 to get his car repaired. The total cost for the repairs was the sum of the amount paid for parts and the amount paid for labor. Tyler was charged \$76 for parts and \$32 per hour for labor. Find the amount of time it took to repair his car.

$$\begin{array}{r} 32x + 76 = 124 \\ -76 \quad -76 \\ \hline 32x = 48 \\ \frac{32x}{32} = \frac{48}{32} \\ x = 1.5 \end{array} \quad \boxed{1.5 \text{ hours}}$$